

CLAIMS

What is claimed is:

- Sub
al*
1. A reinforcing bar connection for joining two reinforcing bars end-to end for use in reinforced concrete construction, comprising a sleeve, and spring finger washers mounted in said sleeve and having a flexible inner edge adapted to expand around reinforcing bar ends projecting into each end of said sleeve and to bite into and grip the bar ends to prevent withdrawal.
 - 10 2. A reinforcing bar connection as set forth in claim 1 including at least two sets of spring finger washers in said sleeve oppositely arranged to bite into and grip said bar ends inserted in each end of said sleeve.
 - 15 3. A reinforcing bar connection as set forth in claim 2 wherein said fingers include generally channel-shape cross-section formations.
 - 20 4. A reinforcing bar connection as set forth in claim 1 including a hardenable matrix filling said sleeve after the bar is inserted, and wherein said spring finger washers include openings when said bar ends are inserted to enable said hardenable matrix to flow past said washers.
 5. A reinforcing bar connection as set forth in claim 4 wherein said hardenable matrix is a resin.
 - 25 6. A reinforcing bar connection as set forth in claim 4 wherein said hardenable matrix is a grout.
 7. A reinforcing bar connection as set forth in claim 2 including a stop washer inserted in said sleeve to limit the extent of insertion of said bar ends inserted into the sleeve.
 - 30 8. A reinforcing bar connection as set forth in claim 7 wherein said stop

washer includes a central hole having a diameter less than that of the bar ends.

9. A reinforcing bar connection as set forth in claim 8 wherein the outside of each spring washer is mounted in a groove in said sleeve.

5

10. A reinforcing bar connection as set forth in claim 4 including at least one wedge-shape groove in the interior of said sleeve at an end thereof forming a shoulder facing the end.

Q/ 10

11. A reinforcing bar connection as set forth in claim 10 wherein the wedge surface of said wedge-shape groove tapers to a smaller diameter toward the end of the sleeve and the shoulder is formed at the larger diameter.

15

12. A reinforcing bar connection as set forth in claim 11 including a plurality of wedge-shape grooves and shoulders at each end of the sleeve.

20

13. A reinforcing bar connection as set forth in claim 2 including from about three to about ten or more oppositely arranged washers in each set in each end of the sleeve.

25

14. A reinforcing bar connection as set forth in claim 1, further comprising a flange attached to one end of the sleeve.

25

15. A reinforcing bar connection as set forth in claim 14, wherein the flanges has holes therein.

30

16. A reinforcing bar connection including a sleeve having a blind hole, spring finger washer means mounted in said sleeve adapted to expand around a reinforcing rod end inserted in said blind hole to bite into and grip said bar end upon attempted withdrawal, said sleeve being embedded in poured concrete with one end of the sleeve exposed at the poured surface after the concrete is poured.

17. A reinforcing bar connection as set forth in claim 16 including a support for said sleeve at said blind hole opening to secure said sleeve to a form.

18. A reinforcing bar connection as set forth in claim 16 including at least 5 one exterior ridge or flange on said sleeve adapted to anchor the sleeve in the poured concrete.

19. A reinforcing bar connection as set forth in claim 18 wherein said blind hole is filled with a hardenable matrix after said reinforcing rod end is inserted in said 10 blind hole.

20. A method of connecting reinforcing bar in reinforced concrete construction, the method comprising arranging spring washers in a sleeve so as to provide a set of spring washers oppositely arranged in each end of said sleeve, said washers having a flexible inner edge, inserting a bar end in each end of said sleeve to deflect said washers so that the inner edge of said washers bites into and grips the bar ends to prevent withdrawal.

21. A method as set forth in claim 20 including the step of providing wedge grooves in each end of the sleeve, and filling the sleeve with a hardenable matrix.

22. A method as set forth in claim 20 including the step of providing at least two wedge grooves and shoulders in each end of the sleeve, and at least three washers in each end of the sleeve.

25

23. A method of forming a reinforcing bar connection for concrete construction, the method comprising forming a sleeve with a blind hole, arranging a set of washers in said sleeve adapted to expand around a reinforcing bar end inserted in said blind hole to bite into and grip said bar end, said sleeve being 30 embedded in concrete with the blind hole opening exposed at the surface of the poured concrete after the concrete is poured.

24. A method as set forth in claim 23 including the step of providing a support for said sleeve at said blind hole opening to secure said sleeve to a form.

25. A method as set forth in claim 23 including the step of filling said sleeve
5 with a hardenable matrix after said bar end is inserted.

fold a 1

100813286 022162